
قطر ستيل
QATAR STEEL

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QATAR STEEL

IN ITS EFFORTS TO MEET THE GROWING DEMAND FOR STEEL IN QATAR AND IN THE REGION, THE COMPANY IS WELL POSITIONED TO MEET THE REQUIREMENTS

COMPANY PROFILE

QATAR STEEL Company was established in 1974 as the first integrated steel plant in the Arabian Gulf. Commercial production commenced in 1978 with the company becoming wholly owned by Industries Qatar (IQ) in 2003. Company celebrated its 38th anniversary on Oct 27, 2016 and was named among the Top Four Steel Producers in the Middle East by MEED, a Middle East business intelligence company, in 2008.

Today, Qatar Steel is widely recognized as a foremost leader in the steel industry, extending its pioneering commitment from an expansive mill site located in the heart of the progressive Mesaieed Industrial City - 45 kilometers south of the nation's capital, Doha. The Company also operates a UAE based subsidiary - Qatar Steel Company FZE.

Inspired to meet the growing demand for steel in Qatar as well as in the region in general, Qatar Steel has embarked upon a series of initiatives aimed at increasing its production capacity. State-of-the-art technically advanced expansion projects are designed to produce world class products. Over the years, Qatar Steel has successfully forged a remarkable reputation by establishing unrivalled quality, flexibility and reliability in all its products and service offerings. Central to this achievement has been the drive to exceed customer's expectations.

QATAR STEEL –Facilities in State of Qatar

Plant facilities have come to include a MIDREX process based DRI/HBI Combo Mega Module, Electric Arc Furnaces with Ladle Refining Furnaces, Continuous Casting Plants, Rolling Mills, Lime Calcination Plant, and By-Products Cold Briquetting Plant with the latest automated technology. Other auxiliaries include well-equipped Jetty facilities, Main Power Substation, Quality Control Center, Research and Sustainability Department, Maintenance Shops, Utility and Clinic.

The plant with its office occupies an area of 1,354,601 square meters, adjacent to which is a further 375,000 square meters plot reserved for future development and expansion. The total committed and skilled workforce is of over 2000 individuals in both operational and administrative roles of 12 different nationalities. Their tasks range from production, engineering, research & development, sales & marketing and distribution of company's products throughout the GCC region and worldwide.

Facilities in FZE -UAE

Qatar Steel Company FZE was established to meet the growing demand for high-quality steel wire-rod products within the GCC as well as in international markets.

The company operates two primary facilities at its 60,000 Sq. meter Jebel Ali Free Zone site that includes:

- State-of-the-art Wire Rod Mill with design capacity of 240,000 MT per annum.
- Advanced Rebar Mill from VAI–POMINI with design capacity of 300,000 MT per annum.

Qatar Steel Products

Qatar Steel's main business is the production and supply of Reinforcement Bar (rebar) (8mm to 40mm), Wire Rods of different grades, Hot Briquetted Iron (HBI)/ Direct Reduced Iron (DRI) and billets, manufactured through modern and state of the art production technology.

By products: Qatar Steel's main by-products are Oxide fines, DR Slurry, DR Dust generated from DRI plant, EAF dust generated from Electric Arc Furnace, Slag generated from Electric Arc furnaces and Ladle Furnaces, Mill scale generated from Caster & Rolling mills.

Qatar Metal Coating Company W.L.L. (Q-Coat), Mesaieed, State of Qatar

Qatar Metals Coating Company W.L.L. (Q-Coat) was established in 1990 as a joint venture between Qatar Steel Company and Qatar Industrial Manufacturing Company (QIMC) with a vision to provide a solution to concrete reinforcement corrosion with the use of fusion bonded Epoxy Coating on Qatar Steel Re-bars. The production capacity of the Q-Coat facility is 105,000 MTPA

MANAGING DIRECTOR AND GENERAL MANAGER'S MESSAGE

MD & GM's MESSAGE

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Sustainability is an integral part of our business strategy. Our sustainability framework addresses economic, social and environmental performances for maximizing our stakeholders value. Through constant innovation, new technologies and processes, we achieved significant improvements in productivity, product quality, HSE standards, reduction of carbon and GHG emissions and in recycling of production wastes comparable to global standards. Through our promise of making steel matter, we are constantly striving for continuous improvements in all areas of operations keeping customers as the core theme of our business. Our close collaboration with our valued customers has enabled us to proactively respond to changing market needs and stay ahead of competition.

Inspired by our vision and strategic goals, we have grown through organic expansions within Qatar and through strategic investments in GCC that include Qatar Steel Company FZE in Dubai, Qatar Metals Coating Company WLL [Q-Coat] in Qatar and Al-SOLB Steel in Saudi Arabia.

We are committed to continue with our endeavors to consolidate our competitive position in the region and reinforce the vital role that we are playing in supporting our national economy and Qatar National Vision 2030.

Ali Bin Hassan Al-Muraikhi
Managing Director and General Manager

VISION, MISSION AND VALUES

At Qatar Steel we are highly inspired by Vision, Mission, Values and Purpose which set the stage to show our committed efforts towards corporate activities and achieve the unattainable.

Vision

We endeavor to be universally recognized as a leading and constantly growing force in the steel industry of the region, to be admired for our business culture, for building value for our shareholders and customers, and for bringing inspiration to our people.

Mission

We will continue to be the first name in the region's steel industry as a sustainable producer, safeguarding Health, Safety & Environment, maximizing stakeholder value and contributing to Qatar National Vision 2030.

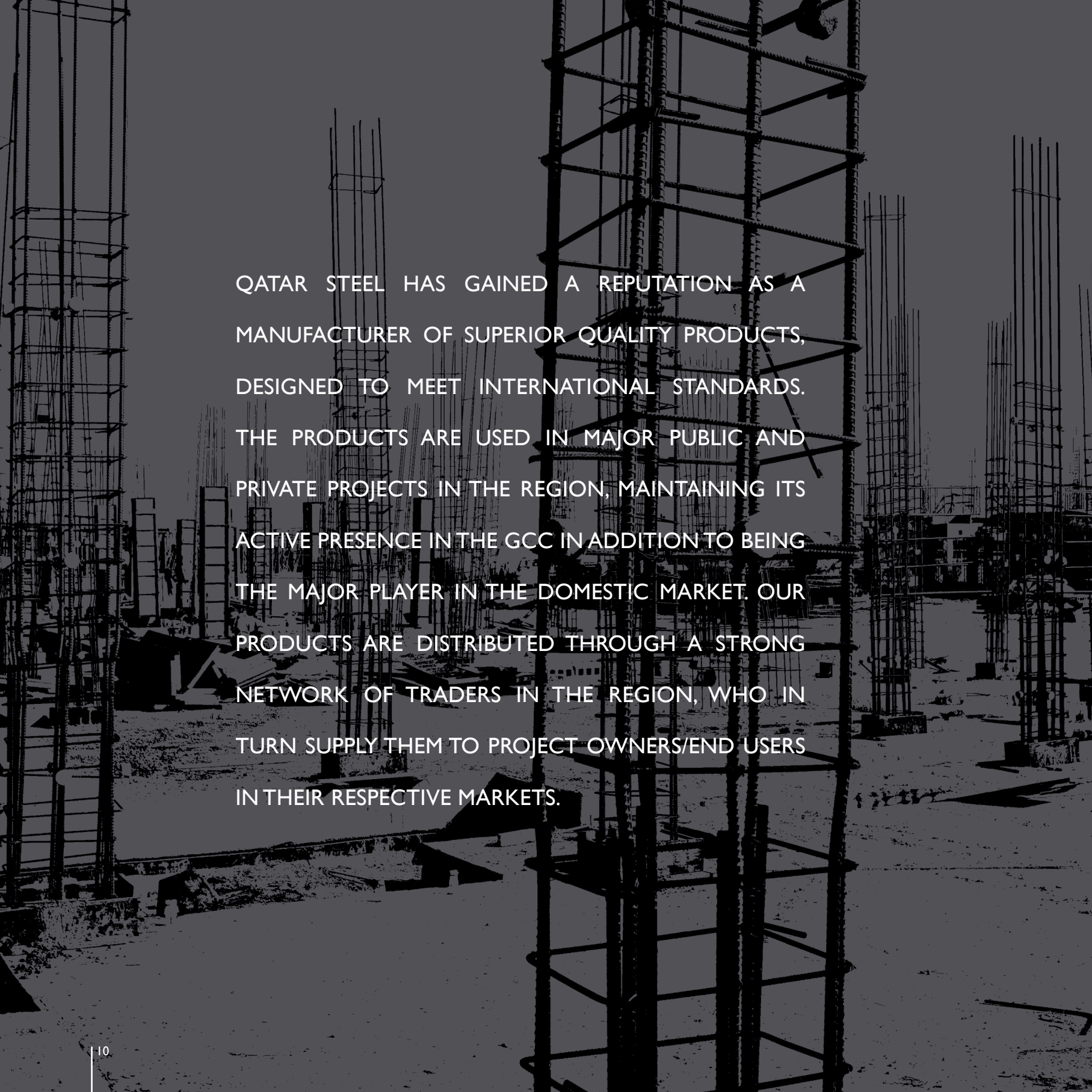
Values

The drivers of our ambition:

- **Trustworthy**
- **Reliable**
- **Creative**
- **Dynamic**
- **Perceptive**

Purpose

To reach a league where we will matter beyond normal commercial objectives. To become the standard for quality enterprise and to exude a winning attitude in order to make a difference in our environment.



QATAR STEEL HAS GAINED A REPUTATION AS A MANUFACTURER OF SUPERIOR QUALITY PRODUCTS, DESIGNED TO MEET INTERNATIONAL STANDARDS. THE PRODUCTS ARE USED IN MAJOR PUBLIC AND PRIVATE PROJECTS IN THE REGION, MAINTAINING ITS ACTIVE PRESENCE IN THE GCC IN ADDITION TO BEING THE MAJOR PLAYER IN THE DOMESTIC MARKET. OUR PRODUCTS ARE DISTRIBUTED THROUGH A STRONG NETWORK OF TRADERS IN THE REGION, WHO IN TURN SUPPLY THEM TO PROJECT OWNERS/END USERS IN THEIR RESPECTIVE MARKETS.

SETTING STANDARDS FOR CUSTOMER SATISFACTION

Quality, Sustainability and Health-Safety-and-Environment (HSE) have been the essence of Qatar Steel's efforts to stay ahead of competition. Passion for brand and constant endeavor to differentiate it from competition has been our first priority at Qatar Steel.

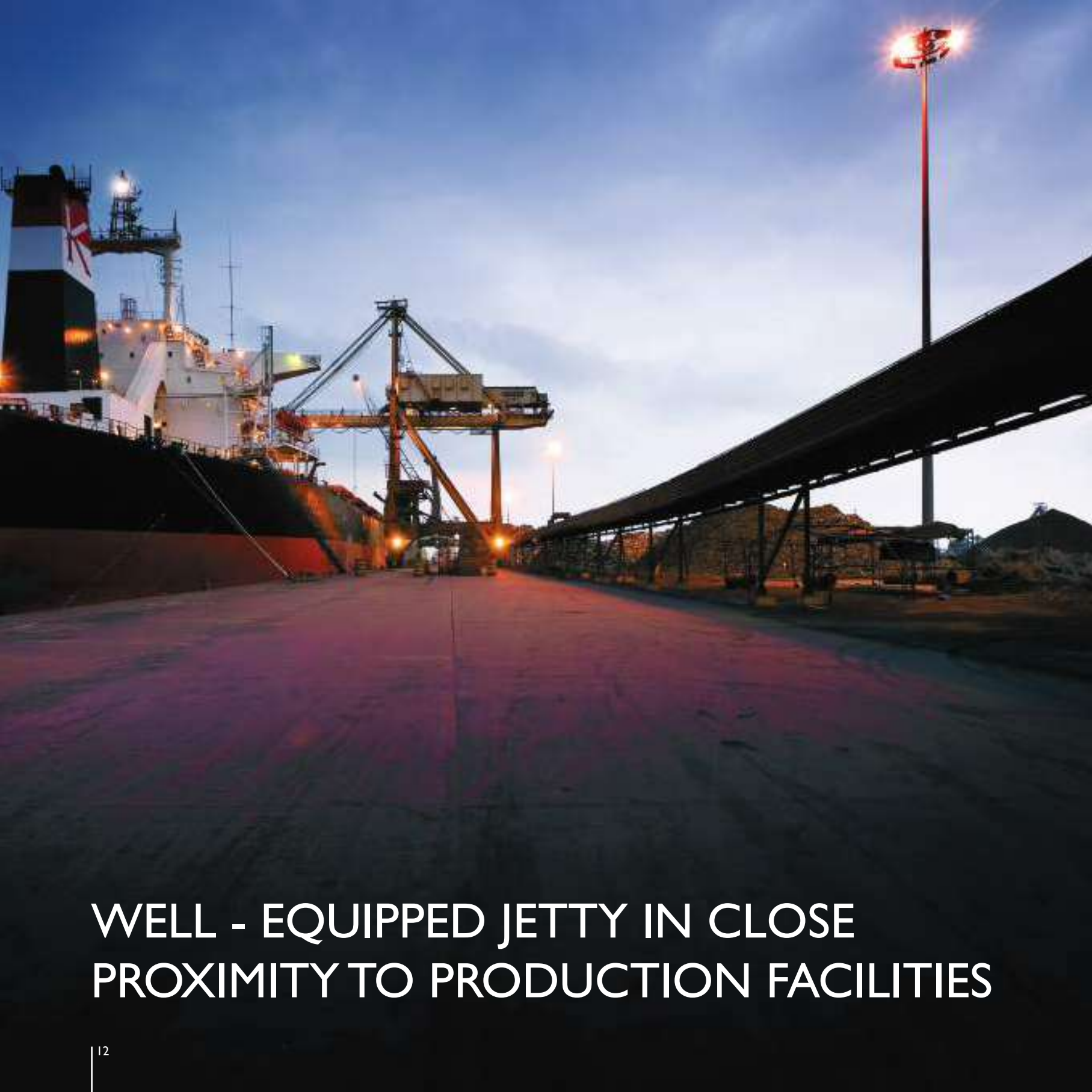
Brand building, Customer centric and data driven method of communicating with the customers to maximize the impact on consumers and other end users have been our first priority in our endeavor to differentiate it from competitors.

The company ensures high sales performance year after year, drawing strength from the mutual relationship with its customers, diligent market research and efficient marketing strategies. While a robust technological network facilitates efficient handling of order management, the sales and shipping operation complement each other by meeting all customer expectations ensuring efficient, reliable and prompt delivery of products to customers.

Market Research provides marketing intelligence that facilitates decision making in determining market development and penetration strategy to ensure the competitiveness of the company at all times. Our constant endeavor to differentiate our brand and inculcate core values has culminated in delivering a unique customer portal – an electronic gateway that facilitates two way communications between the company and its' customers to conduct everyday business. It facilitates customer to place request for desired products online and also track the order status until it is shipped including any agreed changes in the quantity and delivery schedules.

Customer Relationship Management (CRM) in Qatar Steel works on a holistic approach. It delivers solutions and facilitates in establishing an individualized relationships with customers with an aim of improving customer satisfaction in the products and value added services that we provide.

Established in 2006 as a part of Marketing Department, Marketing Communications specializes in delivering cost-effective actionable solutions for the business to facilitate improve on customers' competitiveness and visibility through various brand building strategies. Managing the corporate brand is our top priority.



WELL - EQUIPPED JETTY IN CLOSE PROXIMITY TO PRODUCTION FACILITIES

DIRECT REDUCTION PLANT

Direct Reduction is an iron making process for the new era. It utilizes natural gas to reduce iron ore to produce Direct Reduced Iron (DRI). It is a process whereby iron ore pellets are converted at high temperature to a highly pure form of iron. Qatar Steel has adopted the gas based Direct Reduction Process technology in its integrated complex for iron-making. Its MIDREX process DR Module (DR-1) built and commissioned in August 1978 was the first of its kind in the region with a capacity of 400,000 MTPA (now producing 800,000 MTPA). Qatar Steel has commissioned its 2nd module (DR-2) in April 2007 with a capacity of 1.5 MTPA (now producing 1.6 MTPA), thus making the total capacity of Direct Reduction plant to 2.4 MTPA.

In its over thirty eight (38) years of operations, production from DR-1 has shown continuous improvement and from 2004 onwards it exceeded 800,000 MTPA. This was accomplished by leveraging the inherent capabilities of the equipment, marginal investments in balancing bottlenecks, upgrading the equipment to meet greater efficiencies, along with various other procedural and operational improvements.

Green field DRI/HBI Combo Module

A green field DRI/HBI combo dual discharge 1.5 MTPA module was built and went in to commercial production in April 2007. This plant incorporates all the features of an up-to-date MIDREX Plant. In addition, it uses "SIMPAX" – an automated level-2 quality control module, which produced 1.7 MTPA for Y 2016.

Qatar Steel's Direct Reduction Plants produce both Cold Direct Reduced Iron (CDRI) and Hot Briquetted Iron (HBI). The DR-1 (produces CDRI alone) and DR-2 is a COMBO module that produces CDRI and HBI.

Hot Briquetted Iron (HBI)

Hot briquetting has been practiced on an industrial scale for 3 decades and is a preferred method of preparing DRI for storage and transportation internationally. To make HBI, hot DRI discharged from the MIDREX Shaft furnace at about 700 C is compressed into pillow shaped briquettes with a typical size of 106x48x32mm. HBI is 50 per cent denser than DRI pellets and lump and reduces

the tendency for re-oxidation. This enables HBI to be stored and handled without special precautions as recognized by the International Maritime Organization (IMO).

DR1- Module

Designed capacity: 0.4 MTPA (Commissioned in year 1978)

Best Achieved Production: 0.877 MTPA in 2006

From start-up of DR1- Module, till the end of 2017, DR1- Module produced 25.3 Million tons of DRI.

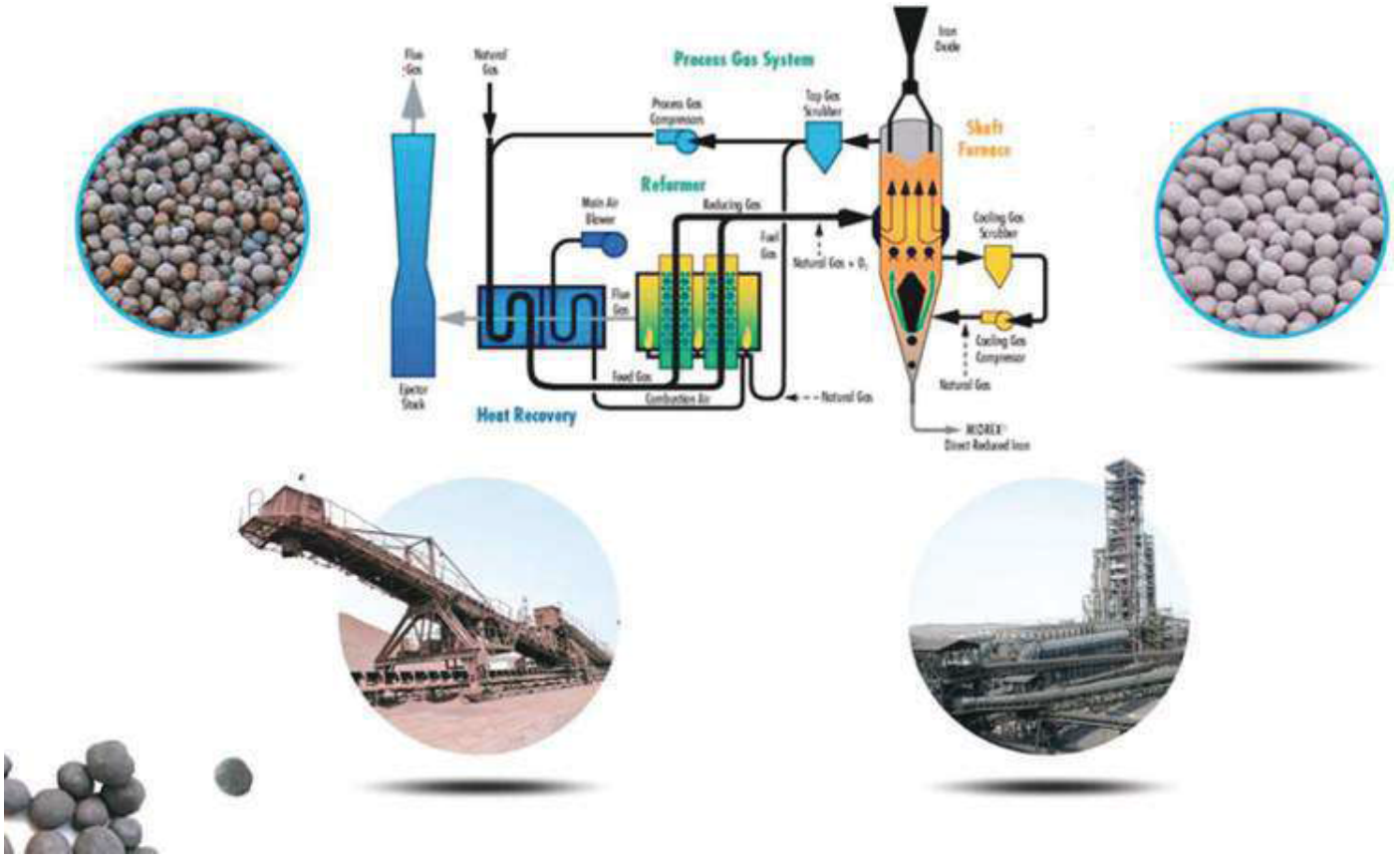
DR2- Module

First of its kind COMBO Plant commissioned in the world.

Designed Capacity: 1.5 MTPA (Commissioned in year 2007)

Best Achieved Production: 1.82 MTPA in 2015. Designed for COMBO Operation (Option: 1 = 100% CDRI, Option: 2 = 50:50% CDRI + HBI)

From start-up of DR2- Module, till the end of 2017, DR2- Module produced 15.8 Million tons of DRI.



ELECTRIC ARC FURNACE

Qatar Steel was the first integrated steel plant in the gulf region that utilized a high percentage Direct Reduced Iron (95%) as a replacement of scrap for the production of steel from Electric Arc Furnaces. The original plant started in 1978 with an aim to utilize abundant natural gas resources available in Qatar for reduction of iron ore as the major feedstock for Electric Arc Furnaces.

Qatar Steel has three (3) Electric Arc furnaces. These are EF3, EF4 & EF5, which are Eccentric Bottom Tapping (EBT) type .EF5 was commissioned in 2014 with 110T capacity.

EF 3, 80T EAF of EBT-type is powered by 70/84 MVA transformer comprising four strands curved mould billet casting machine tha was commissioned in 1999 with an annual capacity of 550,000₤ of billets increasing total production to 1.14 million tons in 2004. A ladle furnace was commissioned in October 2006 to facilitate increase in production whilst reducing the operating cost.

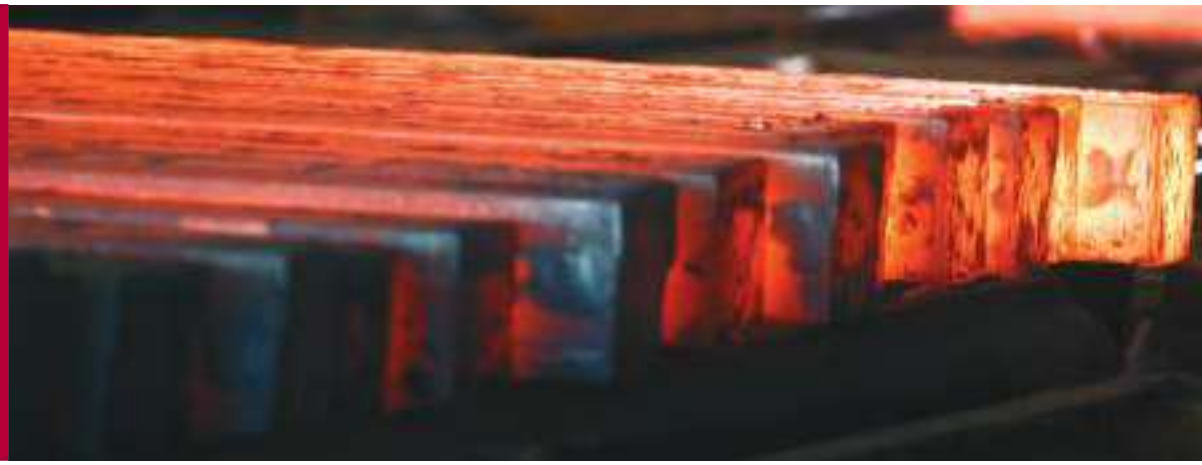
Embarking on another expansion program in 2005, Qatar Steel incorporated EF4 with 80T EBT-type(78/90 MVA) along with a Ladle Furnace and a modern 4-strand curved mould, high speed billet casting machine equipped for special steel grades. This production line was commissioned in 2007 with a design capacity of 660,000 MTPA.

The new Greenfield SMS facilities (EF5) comprising of a high powered 110T EAF / LF / 6-strand billet caster with a capacity of 1.1 MTPA was commissioned in Q1 -2014.

Few salient features are:

- Introduction of Oxygen Injection Technology to make use of chemical energy for speeding up of melting and reduction of electric energy and at the same time increasing the production rate
- Making use of remotely controlled Gunning Robot for faster and more efficient refractory repair
- Using Ladle Furnace as a Secondary Metallurgy between the EAF and Continuous Caster (CC) to achieve longer sequence casting, improved steel quality, and higher casting yield
- Improved automation systems including level 2 PLC controls for better and more consistent process control

CONTINUOUS CASTING PLANT



Continuous Casting is the process whereby molten steel is solidified into a "semi-finished" billet, boom, or slab for subsequent rolling in the finishing mills. Since its inception, a high degree of automation has enhanced operational excellence, increase in throughput by over 50% and reduction in cost.

The Continuous Casting Plant at Qatar Steel is equipped with two Casting Machines of four strands each with a total capacity of 1.4 MTPA. An additional Continuous Casting plant CC5 contributes an additional 1.05 MTPA increasing the total production to 2.45 MTPA. The Continuous Casting machines include the following specifications:

CC3 commissioned in January 2000 is also of 4 strands but of curved mould type.

The sizes of billets are:

- 150 x 150 mm square at a speed of 2.0 to 2.4 meter/minute.
- 130 x 130 mm square at a speed of 2.6 to 2.8 meter/minute.

CC4 commissioned in June 2007 is also of 4 strands with curved mould.

The sizes of billets are:

- 150 x 150 mm square at a speed of 2.6 meter/minute (max)
- 130 x 130 mm square at a speed of 3.5 meter/minute (max)

CONTINUOUS CASTING PLANT

Billets from CC3 CC4 and CC5 are cut to 3.8m ~ 12m by gas cutting equipment. A charge number is punched on each billet by a marking machine and dispatched for further processing to rolling mill for the production of rebar at Qatar Steel and QSC FZE, UAE. Billets are also sold to local and international customers.

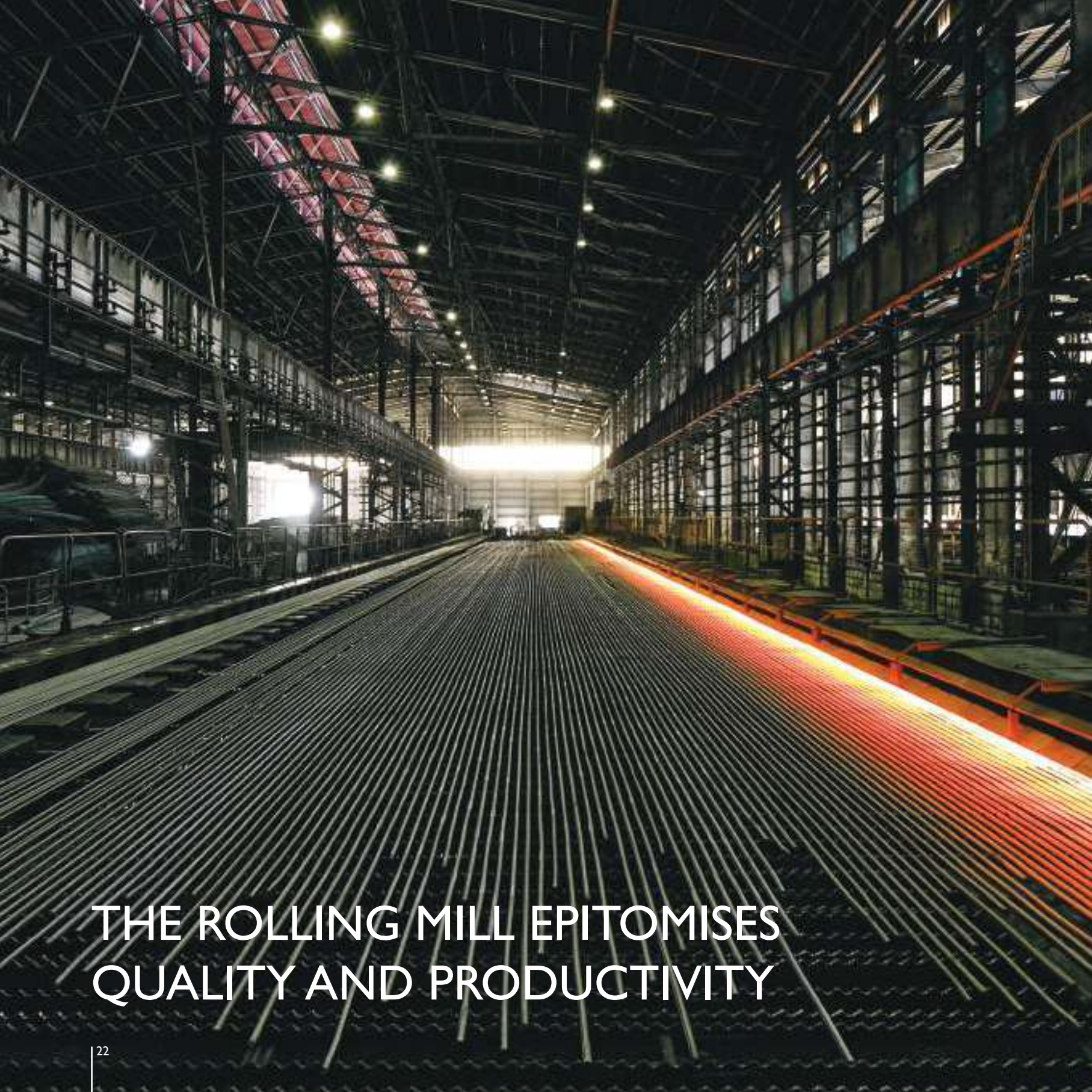
CC5 commissioned in 2014 is of 6 strand billet caster with curved mould and continuous straightening of strand.

The sizes of billets are:

- 150 x 150 mm square at a speed of 3.3 meter/minute.
- 130 x 130 mm square at a speed of 4.2 meter/minute.

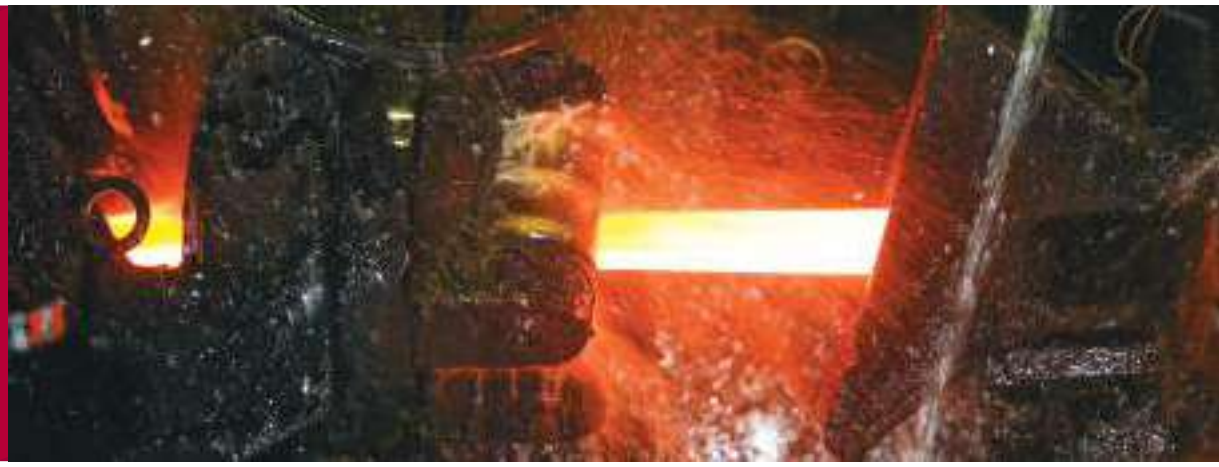
SALIENT FEATURES OF CCP:

- On line Tundish Nozzle change system has been implemented in CC3 & CC4 in order to increase the sequence length of CC Operation and yield.
- Ladle Slide gate system of Vesuvius LV11 was introduced to ensure safety in operation and to reduce the running costs.
- Ladle shroud Manipulator was introduced at CC3.



THE ROLLING MILL EPITOMISES QUALITY AND PRODUCTIVITY

ROLLING MILLS



Advanced technology to meet the market requirements, faster processing speed and higher surface quality are some of the prominent features of the rolling mill at Qatar Steel.

In line with its commitment to the policy of the company related to quality, productivity and safe environment, rolling mill is designed to ensure efficient and safety operation.

The total annual requirements of billets are received from the CC plants. They are delivered in batches on daily basis and charged at reheating furnace and rolled in different sizes according to the rolling plan made based on order from Sales & Marketing Department.

Qatar Steel has two rolling mill plants namely Rolling Mill-1 & Rolling Mill-2 and the combined design capacity is 1,500,000 MTPA.

Rolling Mill-1 (RM1)

RM-1 was successfully commissioned in 1978 to be the first modern mill constructed in the gulf area with a design capacity of 330,000 MTPA, with a size range from 10mm to 40mm, rebars. However after various modifications the capacity has been doubled furthermore, a High Speed Finishing Block mill with complete finishing plant facilities was commissioned in 1996, to be a flexible mill enabling to increase the annual capacity to 700,000 MTPA. Recently two quenching boxes added to the mill for original and High Speed Finishing Block Mills to achieve different steel standards to fulfill customer's requirements.

The Mill comprises of a pusher type reheating furnace consisting of two production lines. The old mill and high speed finishing block mill (HSFBM). The original Mill has twenty convention stands arranged in horizontal sequence. In HSFBM, the line starts after stand#14 by Conversion Bridge and split into twin high speed finishing blocks which consists of 6 stands each twist free.

Rolling Mill-2 (RM2)

In 2006, Qatar Steel successfully commissioned its ultra-modern rolling mill. The design capacity is 900,000 MTPA and its product ranges from 10mm to 40mm rebars in diameter.

The mill consists of 130 Tons/hour walking hearth Reheating Furnace, 18 conventional stands continuous rolling mill in horizontal vertical configuration. The mill adopts latest technologies, like MTC (minimum tension control), length optimization, slit rolling (Triple Bars & double bars). The mill also employs quenching process by Thermex Facility to achieve different steel standards to fulfill customer's requirements.

Rolling Mill at FZE (RM3)

At Qatar Steel FZE, a rolling mill with the latest automation features has been installed with a capacity to produce 300,000MTPA rebars ranging from 8mm - 40mm in diameter and 12 meter straight lengths.

WIRE ROD MILL – FZE (UAE) OPERATIONS:

The wire rod mill at Qatar Steel Company FZE (UAE) employs world class technology supported by renowned MORGAN, DANIELI, SIEMENS & MESTA with outstanding technical features including 40 T/hr reheating furnace with automatic temperature control.

Wire Rod Mill was established in August 2003 to meet the growing demand for high-quality steel wire-rod products in the region. Morgan Construction has installed new drives along with an automation system for wire rod mill in FZE (UAE), which has helped increase the production rates by 25 percent along with product quality enhancement. The new system was installed to increase production speed to 55 m/sec for the mill's low carbon and low alloy steel grade 5.5 mm wire rods has increased production from 180,000 MTPA to about 240,000 MTPA.

Wire Rod Mill (WRM) with latest automation features, is capable of rolling low carbon, low alloy steel, high carbon, and cold head quality wire rods of sizes 5.5mm to 12 mm along with re-bars in coils of sizes 8mm to 12 mm.

Qatar Steel Company FZE, has been successful in obtaining Certificate of Approval from UK CARES (UK CERTIFICATION AUTHORITY FOR REINFORCING STEELS) for complying with requirements of BS EN ISO 9001 2008 and the relevant CARES quality requirements for Rebars in coils in diameters 8mm/ 10mm/12mm in grade BS 4449 Grade B500B. Dubai Central Laboratory (DCL) of Dubai Municipality has granted QATAR STEEL COMPANY FZE a license to use 'DLC Conformity Mark' on its product and is the first Company in the region eligible to use the DCL quality marking. It has also been accredited by UAE Federal Government's Standardization Authority –ESMA-Emirates Authority for Standardization & Metrology (UAE) to use Emirates Mark of conformity (AL-ALAMA) for confirming BS 4449: 2005 for the reinforcement of concrete weldable reinforcing steel.

Mill Layout	
Roughing Mill :	9 Stands + Shear
Intermediate Mill :	Repeater + 6 Stands + 3 Loopers
Pre-Finishing Mill :	2 Stands H-V(Morgan) + 2 Loopers + Shear
Finish Mill :	10 Stand - No Twist Mill (NTM) - Morgan - U.S.A
Water Boxes:	With Equalization Zones Morgan Water quenching system for rebar in coil
Special Feature:	Stelmor Conveyor - 6 Independent Zones, Reform Tub with ring distributor - Morgan U.S.A.
Coil Compactors :	Auto & Manual

LIME CALCINATION PLANT

With the support of a diligent team, Lime Calcination Plant was commissioned in Qatar Steel on December 2011 for producing calcined lime and dololime for captive consumption. Both high calcium and dolomitic lime enjoys its most extensive use as a flux in refining of the steel in EAF. Lime is particularly effective in removing phosphorus, sulphur, and silica, and, to a lesser extent, manganese.

It is also used to perform key functions, such as fine tuning of steel chemistry, lowering of the oxygen content, reduction in the inclusions trapped by the slag, the adjustment of steel temperature, removal of additional impurities, and the prevention of reabsorption of impurities from slags.

Lime Calcined Plant with total design capacity of 550 tons/day was established on 26/12/2011. In Q4 of 2015, it was upgraded to 700 tons/day. Overall set up comprises of 2 nos M/s Cimprogetti Srl, Italy make state of art Vertical Twin D Shaft Natural Gas fired Lime kilns and related material handling system to fulfill requirement of Fluxes of Calcined Lime & dololime used in existing Electrical Arc Furnaces & Ladle Furnaces. It is a process in which Specially sourced Raw Limestone & Dolostone are calcined at temperatures about 1050 Deg C to produce highly reactive and quality products Calcined Lime & Dololime with optimum energy. Material Handling System includes facility of crushing, screening & bagging to prepare the final product sizes as per requirement.

Salient Features

- Utilizes principle of Regenerative Heat Transfer for heat recovery from the waste gas.
- Consistent internal process improvements which helped to produce Calcined Lime & Dololime in switchover mode operation.
- Introduced Pulverizing facility for recycling of waste undersize limestone which enabled its utilization for oxide pallets coating in existing Direct Reducing Plants.

QUALITY ASSURANCE

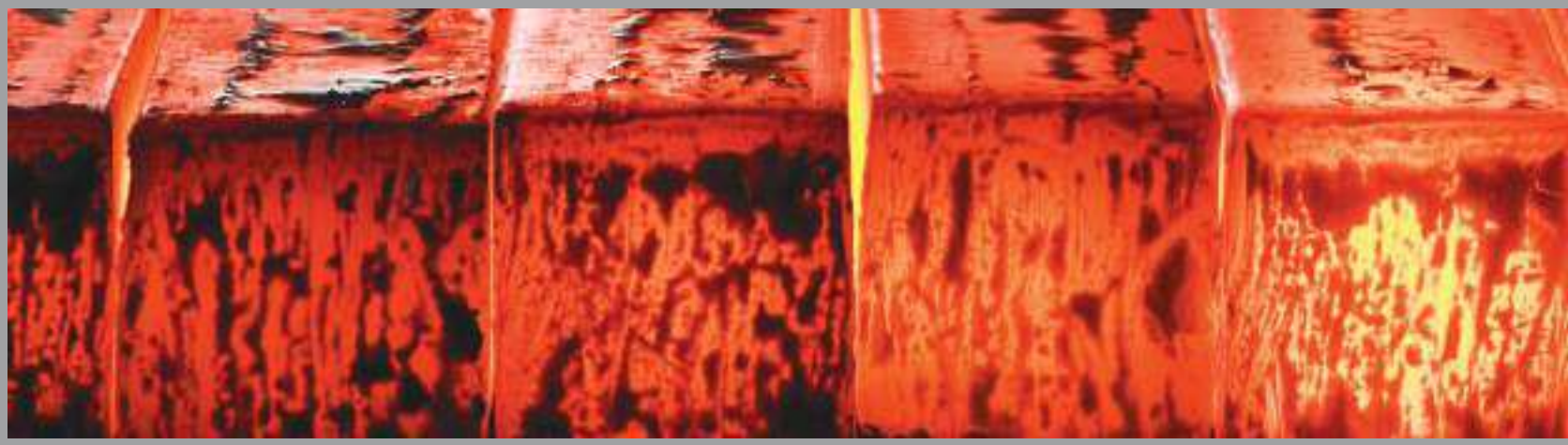
Qatar Steel's quality assurance system has been established to impact its operations across the board, from order placements to shipment of products.

All products including reinforcing bars and wire-rods are manufactured from select raw materials with definite chemical compositions and ensured quality. Inspections are conducted throughout the manufacturing process to ensure compliance to customers' requirements. Qatar Steel has also established ISO 17025 certified Quality Control Laboratories which are equipped with modern testing and analytical instruments, such as an Optical Emission Spectrometer, X-Ray Fluorescence Spectometer, Universal Testing Machines, Oxygen, Nitrogen & Hydrogen analyzers and computerized testing machines

We assure uniform quality which satisfies all local and international requirements. Qatar Steel's Quality Management System meets ISO 9001 standards.

SAMPLE TESTING TO ENSURE PROCESS CONTROL

QUALITY ASSURANCE



NEW TECHNOLOGY

Qatar Steel produces high strength reinforcing bars by Quench and Self Tempered (QST) Method.

A ladle furnace ensures greater homogeneity of steel, resulting in greater uniformity of the mechanical properties and chemical compositions of our reinforcing bars.

THIRD PARTY CERTIFICATION

Consistent with Qatar Steel's resolve of ensuring the quality of its products, reinforcement bars manufactured at facilities in Mesaieed and Dubai have received many prestigious accreditations, including ISO 9001, Product and Sustainability certified by UKCARES, SASO Certification and DCL Certification. The company satisfactorily operates a Quality System which complies with the requirements of BS EN ISO 9001 and relevant CARES Quality and Operations Assessment Schedules. Qatar Steel is certified as a quality manufacturer and supplier of products conforming to BS 4449:2005 Grade B500B and BS 4449:2005 Grade B500C.

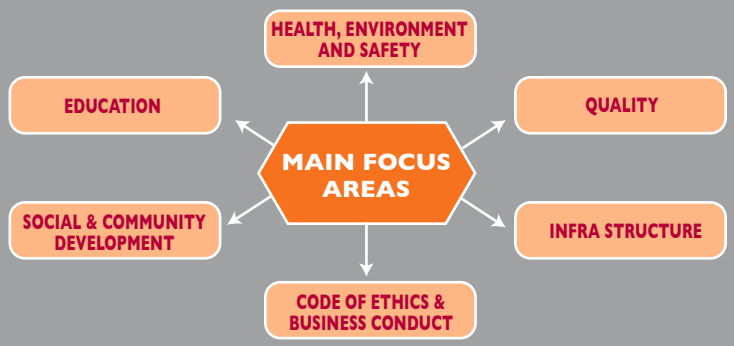
DCL MARKING

Qatar Steel's Deformed Steel Bars have been accredited by Dubai Central Laboratory Department (DCLD) of Dubai Municipality for conforming to standard specifications of BS 4449:2005 Grade B500B & ISO 6935-2:2007 and are authorized to affix the DCL Conformity Mark on the product.

Sustainable Reinforcing Steel Certification

Qatar Steel as an Organization takes responsibility for the impact of its activities on environment and is pioneer in employee welfare measures, social, community initiatives and Environment Sustainability. Qatar Steel has successfully acquired Sustainability certificate in year 2011, certified by UKCARES.

Qatar Steel is committed to Sustainable development in its overall business strategy.



RESEARCH & SUSTAINABILITY

Aligned with QNV 2030 and corporate strategic objectives, in March 2012, Qatar Steel established Research & Sustainability department to facilitate in new product development, process improvement, cost reduction and sustainability & recycling. Production of 'sustainable steel' is expected to reduce CO_2 emissions and recycle wastes thereby protecting the environment and enhancing the core brand value of the company.

Under the New Product Development campaign, R & S department developed new wire rod and rebar grades such as Cable Armor Quality, Electrode Quality and also high strength rebar to cater the demand of GCC market.

R&S is on board with Qatar Foundation to work for the sustainable development of the State of Qatar in line with Qatar National Research Strategy. The department is working on research projects with Qatar University to develop a relation between industry and local institutions.

Under Sustainability and Recycling, it's focus on innovation extends to recycling Qatar Steel's by –Products such as oxide fines, DR Slurry / DR dust produced by the DRI plant, mill scale generated from caster and rolling mill, oxide fine dust from EAF by cold briquetting technology and recycling at DR plant/EAFs.

The department is also exploring to recycle slag generated from EAF for construction of road in collaboration with Ministry of Environment, Ashghal and TRL. Synergy with Q-Companies to recycle their waste in Qatar Steel furnaces is another initiative of the department after successful collaboration with neighboring company named Qatalum.

UNLIKE SCRAP BASED STEEL PLANTS WHICH FACE EMISSION-CONTROL PROBLEMS RESULTING FROM HEAVY METALS AND TOXIC CHEMICALS, QATAR STEEL DILIGENTLY COMPLIES WITH REGULATIONS THAT PROMOTE ENVIRONMENTAL CARE. OUR PRODUCTION IS BASED ON DRI, WHICH EMPLOYS THE CLEANEST RAW MATERIALS. AN EXTERNAL ACCREDITED LABORATORY HAS CONFIRMED OUR ABILITY TO MAINTAIN VERY LOW LEVELS OF HEAVY METAL AND DIOXIN EMISSIONS.

THE ENVIRONMENT

Qatar Steel aspires to be the first name in the region's steel industry. Developments & initiatives undertaken by Qatar Steel include to reach an accident free Plant, reduce toxic emissions illustrates company's proactive role towards safe guarding their employees, protecting environment and making the steel making process more eco-friendly.

Unlike scrap based steel plants facing problem of emissions of heavy metal & toxic chemical, Qatar Steel has an exclusive advantages compared to other plants in the region environmentally. The most significant advantage is that Qatar steels production is based on DRI which uses the cleanest raw material.

Audits used to ensure the System:

External & internal Audits are conducted yearly to ensure that our operations are in accordance with the standards regulated by the Ministry of Environment (MOE) and to meet the internally set targets.

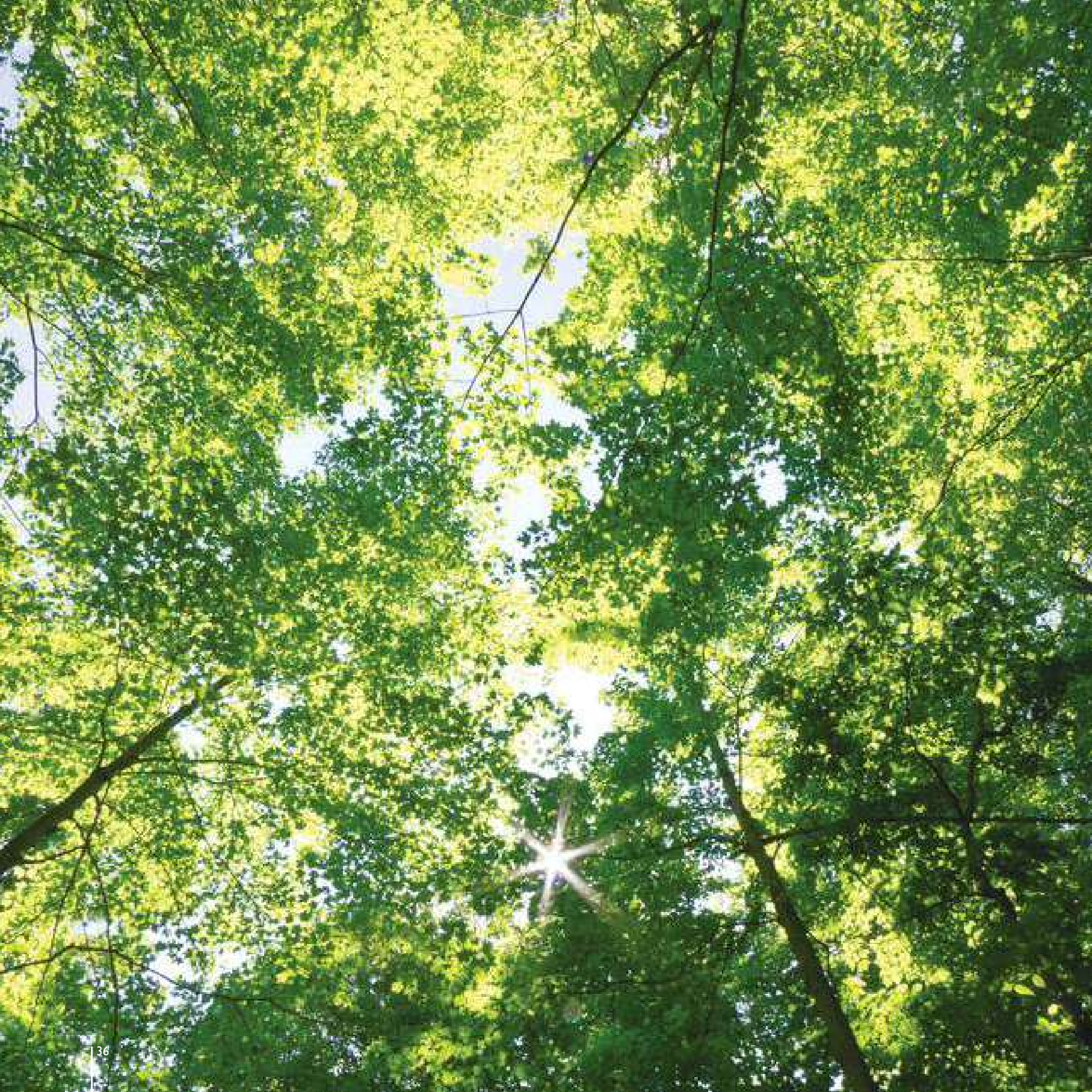
ISO 14001:2004 & Sustainable Reinforcing Steel Certification:

Qatar Steel's reputation in the field of Health, Safety and Environment is integral to its image and corporate culture. Qatar Steel has adopted the new globally accepted environmental Standard ISO 14001:2004. The alignment of environmental objectives, targets and programs with the corporate HSE objective were considered significant achievements during this transition. We succeeded in defining our communication with interested parties, establishing an effective internal & external audit system and reviewing its performance with the top management. Our success has inspired us to proceed with the development of an integrated management system in the near future. Qatar Steel has been also awarded with Sustainable Reinforcing Steel certification by CARES UK during the year 2011.

Qatar Steel had gone ahead to implement OHSAS 18001:2007 to support and promote good health and safety practices in balance with socio economic needs. A detailed gap analysis was conducted to know the requirements of OHSAS 18001 followed by Audits and closing of Non –conformities Accordingly OHSAS 18001:2007 Certificate was awarded to Qatar Steel in 2014.

Environment Management Program:

In addition to spearheading our environment friendly expansion plans, our Safety & Environment Section coordinates various projects with internal departments under an Environment Management Program.



As a part of waste management, Qatar Steel continues to study various options to re-using / re-cycling its production waste. Pelletizing DR product dust and EF dust, recycling of Refractory bricks and extracting iron from slag are some of the programs under progress. The utilization of used tires as a carbon source in the steel melting process is an achievement in the right direction. This project may be able to contribute to solving or reducing a major community waste problem.

The scope of waste management covers all departments, activities, processes and types of waste. The plan applies to all hazardous wastes, non-hazardous wastes, recyclable materials as well as water & energy conservation.

HSE Training:

Safety education & training is a continuous process. Basic HSE training is imparted to all the new employees who join Qatar Steel as well as to all Subcontractor employees in various languages that enable them to enter QS premises.

Heat Stress Management:

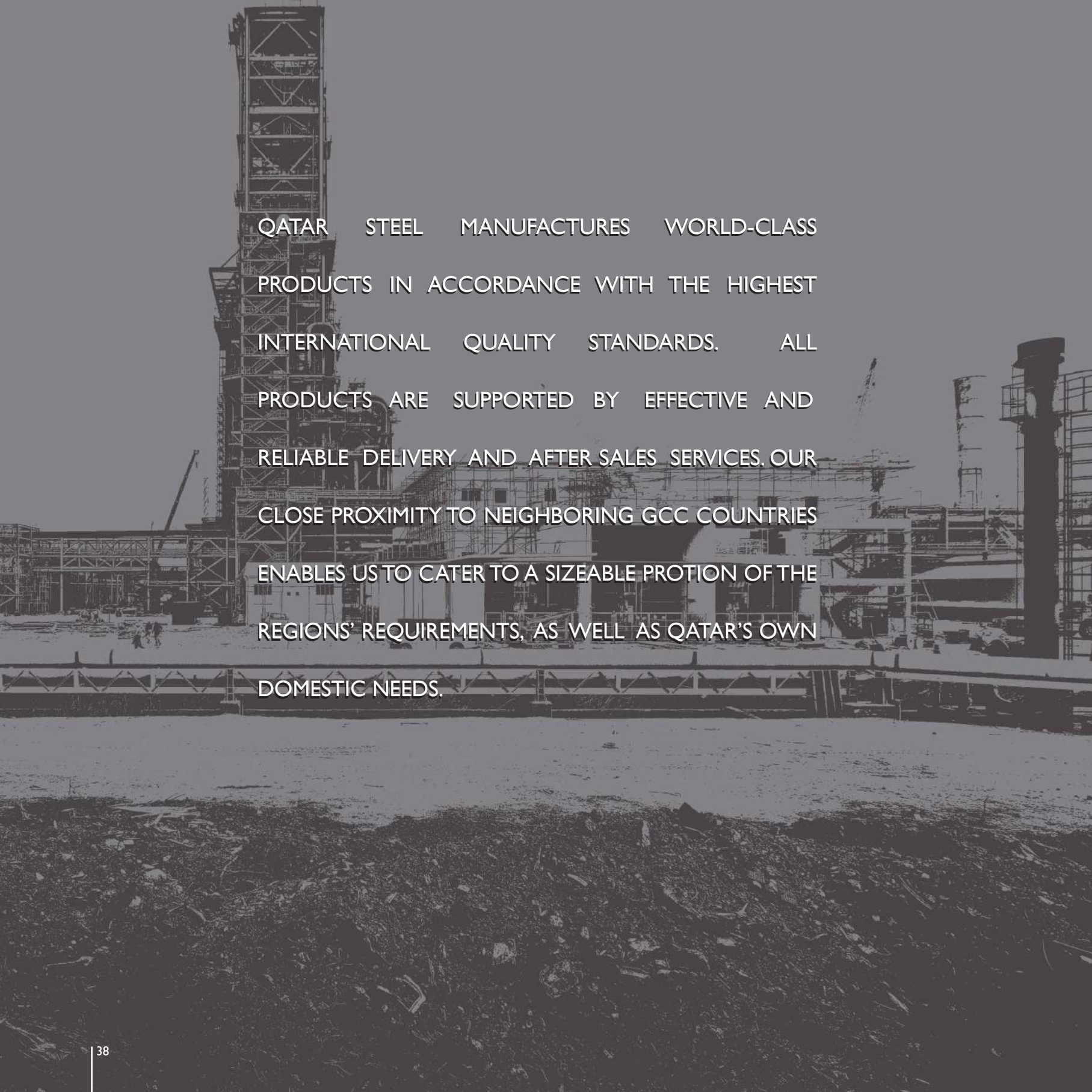
Campaigns on the hazards of heat stress, pamphlets on the do's and don'ts to beat the heat, awareness training program on heat stress by a Medical Officer and Safety Officer and the auditing of work places for Heat Stress Management by HSE representatives are all part of our Heat Stress Management Campaign.

Safety Performance:

The Safety Performance of Qatar Steel is known to be one of the best in the Steel Industry having a very low Accident Frequency & Severity rate in comparison with the like Industries. Being a Sustainable Producer, Qatar Steel has a Strategic objective for the near future with a focus on "No lost time Accident" to become a leader in Safety. A number of Safety initiatives involving employees & motivation awards are being planned & implemented to reach our final aim 'Accident Free Qatar Steel'

Emergency preparedness program

An emergency response contingency plan in Qatar Steel ensures that the health and safety of the employees and environment are safeguarded. Various emergency preparedness drills like, chemical drills, oil spill, fire drill, gas leakage, molten steel leakage drill, building evacuation drills etc. are undertaken from time to time.



QATAR STEEL MANUFACTURES WORLD-CLASS PRODUCTS IN ACCORDANCE WITH THE HIGHEST INTERNATIONAL QUALITY STANDARDS. ALL PRODUCTS ARE SUPPORTED BY EFFECTIVE AND RELIABLE DELIVERY AND AFTER SALES SERVICES. OUR CLOSE PROXIMITY TO NEIGHBORING GCC COUNTRIES ENABLES US TO CATER TO A SIZEABLE PROTION OF THE REGIONS' REQUIREMENTS, AS WELL AS QATAR'S OWN DOMESTIC NEEDS.

PRODUCT SPECIFICATIONS

DRI SPECIFICATIONS:

CHEMICAL COMPOSITION:

Parameter	Guaranteed	Expected
Total Iron (T.Fe)	91.0% Min	92.0%
Metallic Iron (M.Fe)	85.0% Min	86.0%
Metallization	93.0% Min	94.0%
Carbon (C)	2.20% Min	2.40%
Phosphorous (P)	0.06% Max	0.04%
Sulphur (S)	0.01% Max	0.002%
Total Gangue(CaO+Al2O3+MgO+SiO2)	4.8% Max	4.20%

PHYSICAL ANALYSIS

Bulk Density (tons/m3)	1.6 ~ 1.9
Size Under 5 mm at Loading Port	5.0 % Max

HBI SPECIFICATIONS

CHEMICAL COMPOSITION

Parameter	Guaranteed	Expected
Total Iron (T.Fe)	91.00% Min	91.5%
Metallic Iron (M.Fe)	85.00% Min	85.5%
Metallization	93.40% Min	93.90%
Carbon (C)	1.30 % Max	1.10%
Phosphorous (P)	0.050% Max	0.040%
Sulphur (S)	0.0050% Max	0.001%
Total Gangue(CaO+Al2O3+MgO+SiO2)	4.80% Max	4.20%

PHYSICAL ANALYSIS

Bulk Density (tons/m3)	2.4 ~ 2.7
Apparent Density (tons/m3)	4.9 Min
Average Size (mm)	106 X 48 X 32
Size Under Inch at Loading Port (mm)	5.0 % Max

Note: The DRI/HBI is produced with respect to above specification for Qatar Steel Melt Shop, whereas for Export it is produced as per the contractual specification i.e., as required by the customer.

CONTINOUS CASTING IS USED TO MANUFACTURE UNIFORM AND CLEAN BILLETS QUICKLY AND EFFICIENTLY

STEEL BILLETS

Although some of the billets produced at Qatar Steel are directly sold to customers, most are processed into bars at one of our rolling mills. We supply high quality steel billets of various cross-sections and sizes, which enable us to meet the customer requirements and industry specifications, including ASTM, JIS and CNS.

BILLET SPECIFICATION:

Chemical Composition: (As below or as per customer requirement)

Chemistry	%C	%Si	%Mn	%P	%S	N (ppm)
	0.15~0.25	0.12~0.20	0.60~0.80	0.035 max	0.035 max	120 max

Note: Tramp Elements (Ni + Cr + Cu + Mo) = 0.30% max

Physical Parameters:

Sr. No.	Item	Acceptance Criteria
1.	LENGTH	3.8 ~12 meter (150 Section) (±50mm) 6.0 ~12 meter (130 Section) (±50mm)
2.	SECTION	150 X 150 mm2 or 130 X 130 mm2
3.	FACE LENGTH	± 3 mm
4.	RHOMBODITY*	5 % Max
5.	CORNER RADIUS	8 mm
6.	STRAIGHTNESS	Camber 5mm/meter
7.	BENDING	Not more than 5mm in 1 meter Not more than 30mm in 6 meter Not more than 60 mm in 12 meter
8.	ANGULAR TWIST	Not more than 1 degree per meter and not more than 6 degree over 12 meter length.
9.	CUTTING	Both ends will be Gas Cut
10.	IDENTIFICATION	At the end of each billet cast number will be stamped or written by Paint.
11.	SURFACE	The billets will be free from surface imperfection which impair the product Quality such as longitudinal cracks, transverse cracks, Deep Ripple mark, Scab & thick scale, slag Patches, surface blow holes & Internal quality should be free from harmful defects, like surface pinholes, blow hole, pipes, voids and internal crack. As Qatar Steel have open casting process, chances of minor surface pinholes are there and it will not impair the product quality.

$$* \ \% \text{ Rhombodity} = \left[\frac{\text{Dmax} - \text{Dmin}}{\text{Dmax}} \right] \times 100$$

PRODUCT SPECIFICATIONS

REBAR SPECIFICATIONS

Characteristics	BS 4449:2005 Gr B500B	BS 4449:2005 Gr B500C	ASTM A615 Gr60	ASTM A615 Gr 75	ASTM A615 Gr 80	QS600 (YS>600MPa)	ISO 6935-2 :2007 B500B-R	SASO ASTM A 615:2015
Chemical Composition								
Carbon (C) %	0.22 Max	0.22 Max	--	--	--	0.32 Max	0.32 Max	--
Phosphorous (P) %	0.05 Max	0.05 Max	0.05 Max	0.05 Max	0.05 Max	0.05 Max	0.060	0.050 Max
Sulphur (S) %	0.05 Max	0.05 Max	0.05 Max	0.05 Max	0.05 Max	0.05 Max	0.060	0.050 Max
Nitrogen (N) ppm	120 Max	120 Max	120 Max	120 Max	120 Max	120 Max	120 Max	120 Max
CE (%)	0.48 Max	0.48 Max	--	--	--	--	--	0.54 Max
Mechanical & Physical Properties:								
Yield Strength, MPa (min)	500 - 650	500-650	420	520	550	600	500	420
Tensile Strength, MPa (min)	--	--	620	690	725	740	--	620
TS/YS (min)	1.08	>=1.15, <1.35	--	--	--	--	1.08	--
Elongation,(%) , (min)	--	--	9	7	7	7	14	9
Agt (%) (min)	5	7.5	--	--	--	--	5	--

Bend Angle	90	90	180	180	180	180	160 to 180	180
Re-bend Angle	From 90 Back by at least 20	From 90 Back by at least 20	--	--	--	--	From 90 Back by at least 20	--
Weldability								
Weldable / Non-Weldable	Weldable	Weldable	Non-Weldable	Non-Weldable	Non-Weldable	Non-Weldable	Non Weldable	Non Weldable
Application								
	RCC Construction	RCC construction in seismic zone	RCC Construction	RCC Construction	High Raise Towers	High Raise Towers/ Highly loaded RCC structure	RCC Construction	RCC Construction

Note: Bend and Rebend tests are performed as specified in respective standards using proper mandrel diameters

Technical Features

- BS4449:2005 GrB500B rebars are produced with low carbon equivalent & Weldable, whereas ASTM A615 Gr60, Gr75, Gr80, QS 600, ISO 6935-2:2007, B500B-R SASO ASTM A615:2015 are Non-Weldable.
- BS4449:2005 GrB500B rebars have High Strength Compared to ASTM A615 Gr60 which reduces steel consumption & congestion in structure, in turn reduces overall cost of project
- BS4449:2005 GrB500B rebars have High Yield Strength i.e. 500 MPa (Min) compared to ASTM A615 Gr60, without compromising on ductility
- BS4449:2005 GrB500B rebars have better bend performance, due to severe bend & re-bend angle. Rebars conforming to BS 4449:2005 Specification, are subjected to Fatigue testing and survive minimum 5 million stress cycles
- QS 600 with Yield Strength>600 MPa: Over the years rebar with yield strength 420MPa, 460MPa, 500MPa etc. conforming to BS 4449/ASTM A 615 specifications were available in Qatar/GCC region. Rebar with higher strength i.e. YS>600MPa will reduce the steel consumption by around 20 % in construction, which in turn lowers the overall cost of structure. Using high strength rebar QS 600 can also lead to reduction in column size of heavily loaded structure and there is relief from rebar congestion.

Designation No.	Nominal Dia. (mm)	Nominal Mass Per meterrun (kg/m)	Tolerance (against nominal mass) ASTM (%)	BS (%)	ISO (%)	SASO ASTM A615:2015 (%)
D8	8	0.395	- 6	±6	±8	±6
D10	10	0.617	- 6	±4.5	±6	±6
D12	12	0.888	- 6	±4.5	±6	±4
D14	14	1.210	- 6	±4.5	±5	±4
D16	16	1.580	- 6	±4.5	±5	±4
D18	18	2.000	- 6	±4.5	±5	±4
D20	20	2.470	- 6	±4.5	±5	±4
D22	22	2.980	- 6	±4.5	±4	±3.5
D25	25	3.850	- 6	±4.5	±4	±3.5
D28	28	4.830	- 6	±4.5	±4	±3.5
D30	30	5.550	- 6	±4.5	±4	±3.5
D32	32	6.310	- 6	±4.5	±4	±3.5
D36	36	7.990	- 6	±4.5	±4	±3
D40	40	9.864	- 6	±4.5	±4	±3

Rebar Marking:

"QATAR STEEL" is embossed on each rebar produced at facility.

BS4449:2005 Grade B500B and Nuclear grade	For local and Other Countries 
BS4449:2005 Grade B500C and Nuclear grade	
BS4449:2005 Grade B500B and Nuclear grade	For UAE 
QS600	
SASO ASTM A615:2015 ASTM A615 Gr60	XX-Indicates the size of rebar 
ISO6935-2 B500B-R	XX-Indicates the size of rebar 

SPECIFICATION OF CALCINED LIME

Chemical Composition

Elements	Guaranteed
Calcium Oxide (CaO)	92.5% Min
Magnesium Oxide (MgO)	2.0% Max
Silica (SiO_2)	1.0% Max
Alumina (Al_2O_3)	0.20% Max
Sulfur(S)	0.06% Max
LOI	4.5% Max

Physical Properties

Size Range	25 ~ 80 mm
Size above 80 mm at Loading Port	3.0% Max
Size below 25 mm at Loading Port	10.0% Max

Remarks: Qatar Steel ensures that product will be free from clay, dirt & other foreign materials.

Type of Packing:

The material will be packed in jumbo bags of 1.5 Ton capacity.

SPECIFICATION OF DOLOLIME:

Chemical Specification

Elements	Guaranteed
CaO	54.0% Min
MgO	32.0% Min
SiO_2	2.0 Max
Al_2O_3	0.5% Max
Phosphorous (P)	0.025% Max
Sulphur (S)	0.025% Max
Fe_2O_3	0.5% Max
LOI (at Load Port)	5.0% Max

Physical Specification

Size Range	5 mm ~ 80mm
Size Under 5 mm at Loading Port	10.0 % Max
Size Above 80mm at Loading Port	3.0% Max

SPECIFICATION OF PULVERIZED LIMESTONE

Chemical Composition

Elements	Guaranteed
Calcium Oxide (CaO)	50.0% Min
Magnesium Oxide (MgO)	2.5% Max
Silica (SiO_2)	1.0% Max
Alumina (Al_2O_3)	0.5% Max
Phosphorus (P)	0.025% Max
Sulfur(S)	0.05% Max
Ferric Oxide (Fe_2O_3)	2.0% Max
Moisture	0.5% Max

Physical Properties

Size above 200 µm at Loading Port	4.0% Max
Remarks: Qatar Steel ensures that product will be free from clay, dirt & other foreign materials.	

Type of Packing:
The material will be packed in jumbo bags of 1.5 Ton capacity.

QATAR STEEL FZE (Dubai, UAE) - WIRE ROD AND REBAR IN COIL SPECIFICATIONS

Product Size:												
Products	Size - MM											
Wire Rod	5.5	6.0	6.5	7.0	8.0	9.0	10	11	12	14	16	--
Rebar In Coil	--	--	--	--	8.0	--	10	--	12	14	16	--

Wire Rod Grades: SAE1006/CAQ/EWNR/SAE1008/ SAE1012/ SAE1018/ SAE1042/ SAE 1045/ SAE1060/ SAE1065/ SAE1070/ SAE1080

Rebar in Coil: ASTM A615 GR60 / BS4449:2005 GRB500B / ISO 6935-2

Coil Weight & Dimension	**Metallurgical Standard**
Inner Diameter (MM) : 850 – 950	Decarburization : 1% max of wire rod diameter
Outer Diameter (MM) : 1100-1200	Surface Defect : 1% max of wire rod diameter
Coil Weight (Kg) : 1050 -1200	Cold Up-settability: 67% (Billet route)

Grade	%C	%Mn	%Si	%P	%S	YS [MPa]	TS [MPa]	%El	%Agt / %Ra	End Application
SAE 1006	0.08 Max.	0.25 – 0.40	0.15 Max	0.035 Max	0.025 Max	240 – 290	340 – 415	35 Min	--	Wires for miscellaneous application/ Galvanized Wire
CAQ Cable Armor Quality	0.04- 0.06	0.30 - 0.40	0.030 Max	0.035 Max	0.025 Max	240 - 300	340 - 380	30 Min	70 Min	Cable Armoring Wires
EWNR/S1 /SWRY11	0.04- 0.06	0.40 - 0.60	0.050 Max	0.035 Max	0.025 Max	250-300	390 Max	30 Min	70 Min	Stick Welding Electrodes
SAE 1008	0.06 – 0.10	0.30 – 0.50	0.15 Max	0.035 Max	0.025 Max	250 – 300	350 – 425	30 Min	--	Galvanized wire for fencing/poultry farm/ barbed wire
SAE 1012	0.10 – 0.15	0.30 – 0.60	0.15 Max.	0.035 Max	0.025 Max	275 – 325	400 – 475	30 Min	--	Wire Mesh
SAE 1018	0.15 – 0.20	0.60 – 0.90	0.10-0.35	0.035 Max	0.025 Max	300 – 350	450 – 525	22 Min	--	Wires for miscellaneous application
ASTM A615 GR60	0.32 Max.	0.60 – 1.00	0.35 Max	0.035 Max	0.025 Max	420 Min	620 Min	9 Min	--	RCC Construction
ASTM A615 GR75	0.32 Max	0.60 - 1.00	0.35 Max	0.035 Max	0.025 Max	520 Min	690 Min	7 Min	--	RCC Construction
BS4449 :2005 GRB500B	0.24 Max.	0.60 – 1.00	0.35 Max	0.035 Max	0.025 Max	500-650	YS x 1.08 Min	--	5 Min	RCC Construction
BS4449 :2005 GR B500C	0.24 Max	0.60 -1.00	0.35 Max	0.035 Max	0.025 Max	500-650	≥YS x 1.15 <YS x 1.35	--	7.5 Min	RCC Construction
ISO6935-2:2007 B 500B-R	0.32 Max	0.60 - 1.00	0.35 Max	0.050 Max	0.050 Max	500 Min	YS x 1.08 Min	14 Min	5 Min	RCC Construction
SASO ASTM A615:2015	0.33 Max	1.80 Max	0.35 Max	0.050 Max	0.050 Max	420 Min	620 Min	9 Min	--	RCC Construction

Dimensional Tolerances of Wire Rods:

Standard	Wire Rod Size—Mm	Tolerance-Mm +/-	Out Of Round- Mm	Remarks
QS FZE	5.5 - 16.0	0.20	0.30 MM	QS FZE Tolerance is Half of - ASTM Tolerance
ASTM A510	5.5 - 16.0	0.40	0.60 MM	General requirements

Coil Identification

Each coil will have tag with unique coil number and Heat number

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